

Physical Science 10: Series and Parallel Circuits and Schematics

Procedure: Create each of the following circuits with the materials in the kit. On a separate piece of paper and using a ruler draw the schematic for each circuit and answer the questions that are listed on the bottom of the page (each group member should help by drawing one or two and only one per group please). For each circuit use a battery of no more than four cells and only use identical light bulbs. Please don't leave the batteries connected if you don't need to as that will drain them quickly.

Series Circuits

- Batteries, a switch, and one light.
- Batteries, a switch, and two lights.
- Batteries, a switch, and three lights.

Parallel Circuits

- Batteries, a switch that controls all lights at once, and two lights in parallel.
- Batteries, two lights in parallel, and two switches (one to control each light).
- Batteries, three lights in parallel, and one switch to control them all.

General Questions

1. For a series circuits:
 - a. What happens to the brightness of the lights as more bulbs are added?

 - b. Explain your answer in (a) in terms of the energy coming from the battery.

 - c. What happens if one bulb burns out or is removed from the circuit?

 - d. Think of, and write down, an example of a series circuit used in a home.

